

## **Green Eggs and Sand – Module One: Next Generation Science Standards**

*Courtesy of Maryland Department of Natural Resources Aquatic Education Program*

### **Horseshoes Alive – Upper Elementary, Middle School**

*Next Generation Science Standards:*

- 3-LS1-1 – Use models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
- 4-LS1-1 – Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- 4.LS1-2 – Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.
- MS-LS1-4 – Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors...affect the probability of successful reproduction.
- MS-LS1-8 – Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior...
- MS-LS4-Apply scientific ideas to construct an explanation for the anatomical similarities and differences...between modern and fossil organisms to infer evolutionary relationships.

### **Getting to Know the Horseshoe Crab – Middle School**

*Next Generation Science Standards:*

- MS-LS1-4 – Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors...affect the probability of successful reproduction.
- MS-LS1-8 – Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior...
- MS-LS4-Apply scientific ideas to construct an explanation for the anatomical similarities and differences...between modern and fossil organisms to infer evolutionary relationships.

### **Learning With Limulus – Upper Elementary, Middle School**

*Next Generation Science Standards:*

- 4-LS1-1 – Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

### **Time Tracking – Middle School, High School**

*Next Generation Science Standards - None*

### **Life Stages of the Horseshoe Crab – Elementary, Middle School**

*Next Generation Science Standards:*

- 3-LS1-1 – Use models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
- MS-LS1-4 – Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors...affect the probability of successful reproduction.

### **Food/Energy Web – Middle School**

*Next Generation Science Standards:*

- MS-LS2-3 – Develop a model to describe the cycling of matter and the flow of energy among living and nonliving parts of an ecosystem.

### **Crab Moon** – Upper Elementary, Middle School

*Next Generation Science Standards:*

- 4.LS1-2 – Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.
- MS-LS1-4 – Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors...affect the probability of successful reproduction.
- MS-LS1-8 – Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior...
- MS-ESS1-1 – Develop and use a model of the Earth-sun-moon system to describe the cyclic pattern of lunar phases...

### **Horseshoe Crabs and the Lunar Cycle** – Middle School, High School

*Next Generation Science Standards:*

- MS-LS1-4 – Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors...affect the probability of successful reproduction.
- MS-LS1-8 – Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior...
- MS-ESS1-1 – Develop and use a model of the Earth-sun-moon system to describe the cyclic pattern of lunar phases...

### **Reach the Beach** – Upper Elementary, Middle School

*Next Generation Science Standards:*

- 3-LS4-3 – Construct an argument with evidence that in a particular habitat some organism can survive well, some survive less well, and some cannot survive at all.
- MS-LS1-4 – Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors...affect the probability of successful reproduction.

### **Horseshoe Crab Jeopardy** – Middle School, High School

*Next Generation Science Standards – None*

### **Field Studies with Horseshoe Crabs** – Middle School, High School

*Next Generation Science Standards:*

- Middle School, High School – Performance evaluations include planning and conducting investigations, analyzing and interpreting data, using mathematical and computational thinking, and constructing explanations.